National Institute of Environmental Health Sciences

Weather daily variation in winter and its effect on behavior and affective states in day-care children

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Year: 2011
Journal: International Journal of Biometeorology. 55 (3): 327-337

Abstract:

This study aimed to analyze the impact of winter weather conditions on young children's behavior and affective states by examining a group of 61 children attending day-care centers in Florence (Italy). Participants were 33 males, 28 females and their 11 teachers. The mean age of the children at the beginning of the observation period was 24.1 months. The day-care teachers observed the children's behavioral and emotional states during the morning before their sleeping time and filled in a questionnaire for each baby five times over a winter period of 3 weeks. Air temperature, relative humidity, air pressure and solar radiation data were collected every 15 min from a weather station located in the city center of Florence. At the same time, air temperature and relative humidity data were collected in the classroom and in the garden of each day-care center. We used multilevel linear models to evaluate the extent to which children's emotional and behavioral states could be predicted by weather conditions, controlling for child characteristics (gender and age). The data showed that relative humidity and solar radiation were the main predictors of the children's emotional and behavioral states. The outdoor humidity had a significant positive effect on frustration, sadness and aggression; solar radiation had a significant negative effect only on sadness, suggesting that a sunny winter day makes children more cheerful. The results are discussed in term of implications for parents and teachers to improve children's ecological environment.

Source: http://dx.doi.org/10.1007/s00484-010-0340-2

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Indoor Environment, Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Italy

Health Impact:

specification of health effect or disease related to climate change exposure

Mental Health/Stress

Mental Health Effect/Stress: Childhood Behavioral Disorder

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Children

Other Vulnerable Population: Mentally ill

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified